APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/898,431	07/02/2001	Yuri Granik	MEGC117332	1914

26389   7590   08/02/2005

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EXAMINER
STEVENS, THOMAS H

ART UNIT	PAPER NUMBER
2123	

DATE MAILED: 08/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/898,431	GRANIK ET AL.
	Examiner	Art Unit	
	Thomas H. Stevens	2123	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 May 2005*.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-25* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

1.   Claims 1-25 were examined.

Response to Applicants' Arguments (1st Office Action)

Response to Applicants' Arguments (1st Office Action)

102(e)

2.   Applicants are thanked for addressing this issue. However, the prior art does

suggest etch effects (error do to etch distortions) which the reason for the simulation to

meet specified targets (column 6, lines 1018) with mask compensation (column 1, lines

46-50). Applicants state the prior art doesn't suggest nor teach the calculation of the

etch effects which the office claims inherency to the level of skill and detail of this art.

Rejection stands.

Section II: Final Rejection (2nd Office Action)

Claim Rejections - 35 USC § 102

3.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under

section 122(b), by another filed in the United States before the invention by the

applicant for patent or (2) a patent granted on an application for patent by

another filed in the United States before the invention by the applicant for patent,

except that an international application filed under the treaty defined in section

351(a) shall have the effects for purposes of this subsection of an application

filed in the United States only if the international application designated the

United States and was published under Article 21(2) of such treaty in the English

language.

4.   **Claims 1-25** are rejected under 35 U.S.C. 102(e) as being anticipated by Pierrat

et al (U.S. Patent Number 6,584,609), herein referred to as **Pierrat**.

5.   As to **Claims 1, 2, 5, 8, 9, 12, 15, 20 and 23, Pierrat** discloses: A method of

compensating mask/reticle (target layer) data for lithographic process distortions,

comprising the acts of: reading a first set of mask/reticle data that defines at least one

feature to be created lithographically (Figure7, element 720 and column 6, lines 47-51);

performing a simulation of the etch effects (error due to etch distortions) that would

occur if a wafer is created using a mask/reticle corresponding to the first set of

mask/reticle (target layer) data (Figure 7, element 730, column 6, lines 53-55, column 5,

lines 21-32); using the results of the etch simulation (error die to etch distortion) to

create a second set of mask/reticle data that defines at least one new or modified

feature to be created lithographically (Figure 7, element 730, column 6, lines 53-58,

column 5, lines 21-32) wherein etch biases are calculated for each manufacturing

process and applied in an OPC loop with the manufacturing OPC model (column 5,

lines 21-32, Figure 7, elements 730,740,750); and performing optical process correction

(OPC) using the second set of mask/reticle data as an input to create a third set of

mask/reticle data that, when used in a lithographic process, will produce a set of objects

on a wafer that substantially matches the new target layer (Figure 7, flow of elements

750, 730, 740, 770, column 6, lines 60-column 7, line 4); exporting the third set of

mask/reticle data to a mask/reticle writer to manufacture a corresponding mask/reticle

and using the mask/reticle to create the device on the wafer (Figure 7, element 770).

7.   As to **Claims 3, 4, 6, 7, 10, 11, 13, 14, 18, 19, 21, 22, 24 and 25, Pierrat**

teaches: in which the step of performing a simulation includes accessing a set of

predetermined rules for the etch process (column 5, lines 28-40, column 13, lines 47-

53). The model is stored in the storage area of the computer system running the

simulation (Figure 12, elements 1220,.1225, 1240). Since models if different

manufacturing processes are made and each model includes etching effects due to wet

or dry effects, it is known that this data will be stored in memory. Therefore, when the

simulation is run, the memory, or "table" is accessed to extract these values for etch

effect.

8.   As to **Claim 16, Pierrat** teaches: the method of claim 15, wherein the optical

process correction algorithm corrects the third set of data for optical and resists

distortions (Figure 7, loop of elements 750, 730 and 740 and description, column 5,

lines 29-33).

9.   ·   As to **Claim 17, Pierrat** teaches: In the method of claim 15, wherein the optical

process correction algorithm simulates optical process distortions in a lithographic

process (Figure 7, loop of elements 750, 730 and 740 and description, column 5, lines

29-33); and adjusting the third set of data that defines a pattern of objects to be created

lithographically until a simulation of a pattern created lithographically from the third set

of data substantially matches the new target layer (Figure 7, element 740 and

description).

Conclusion

10.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

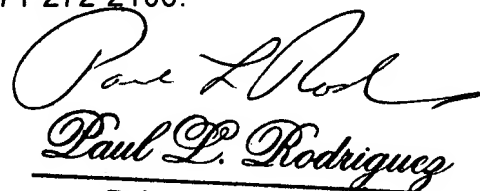than SIX MONTHS from the mailing date of this final action.

Correspondence Information

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Mr. Tom Stevens whose telephone number is 571-272-

3715, Monday-Friday (8:00 am- 4:30 pm) or contact Supervisor Mr. Leo Picard at (571)

272-3749. Central Fax number is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application should

be directed to the TC 2100 Group receptionist: 571-272-2100.

July 26, 2005

THS

Paul L. Rodriguez   7/27/05

Primary Examiner
Art Unit 2125